

What is claimed is:

[Claim 1] A multiband antenna comprising a lower radiator and at least three upper radiators, all of the radiators spaced from each other and disposed on the same longitudinal axis,

a first transmission line extending to a first feed point located between and connected to the lower radiator and one of the upper radiators,

a second transmission line extending to a second feed point connected to at least two of upper radiators, the lower radiator and the upper radiators forming a dipole radiator centered on the first feed point that resonates in a lower frequency band for signals transmitted along the first transmission line, and at least two of the upper radiators forming a dipole radiator centered on the second feed point that resonates in a higher frequency band for signals transmitted along the second transmission line, and

at least two isolation circuits connected between the upper radiators, wherein the isolation circuits resonate at different frequencies within the lower frequency band.

[Claim 2] The multiband antenna of claim 1 wherein at least three isolation circuits are disposed among the upper radiators and the isolation circuits are resonant at higher frequencies the further they are from the lower radiator.

[Claim 3] The multiband antenna of claim 1 wherein each isolation circuit is an inductance – capacitance circuit.

[Claim 4] The multiband antenna of claim 1 wherein each isolation circuit comprises a capacitor connected in parallel with an inductor, and both are connected in series with another capacitor.

[Claim 5] The multiband antenna of claim 1 wherein the lower frequency band is 30–88 MHz.

[Claim 6] The multiband antenna of claim 1 wherein the higher frequency band is 225–450 MHz.

[Claim 7] The multiband antenna of claim 1 wherein the lower frequency band is 30–88 MHz and the higher frequency band is 225–450 MHz.

[Claim 8] The multiband antenna of claim 1 wherein each isolation circuit comprises a coaxial stub.

[Claim 9] The multiband antenna of claim 1 wherein each dipole radiator is center fed by the respective first and second transmission lines.

[Claim 10] The multiband antenna of claim 1 wherein each radiator is a conductive tube.

[Claim 11] The multiband antenna of claim 10 wherein the first and second transmission lines extend through the conductive tubes to their respective feed points.